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ABSTRACT

It has been hypothesized that college students develop differently in various areas of experience, that they learn to deal with interpersonal relationships early in their college experience, but that they may not have time to develop leisure interests. Instruments designed to assess growth on three of Chickering's student development vectors (Developing Purposes, Freeing Interpersonal Relationships, Establishing Identity) were administered to incoming college freshmen and readministered to the same group 4 years later. No substantial changes were found on the Developing Purposes vector. Substantial growth was found on the Freeing Interpersonal Relationships vector. Significantly lower scores were found on the Establishing Identity vector indicating negative growth in this area. Results suggest that for many students, growth on certain vectors is more likely to occur after college. (Author/JAC)

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Student Development on Three Vectors Over Four Years

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Student Development on Three Vectors Over Four Years

I am going to be reporting on a continuing study being carried out at The University of Iowa designed to assess student development on a number of different aspects. Briefly, the study has involved administering several different instruments designed to assess student development to incoming freshmen and then readministering the instruments along toward the end of the freshman year or beginning of the sophomore year and then a third time four years after entrance when most of the students are graduating seniors. In this way, using the freshmen scores as a baseline, student development can be plotted during the four years and related to various influences in the environment and experiences of students to determine which are related to student development in a positive direction and which negative--which seemed to enhance development and which seemed to hinder it.

As a part of this research three instruments designed to assess development on three of Chickering's vectors at these three different points in the students college careers. The project began back in the academic year 1976-77 in an informal seminar made up of faculty, graduate students, and student services staff, interested in the topic of student development on the campus and in studying this development at The University of Iowa. The seminar then developed into a credit course in which the various graduate students in the course undertook to measure different aspects of student development. Three students undertook the

tasks of assessing development on three of Chickering's vectors. They each developed a pool of items which attempted to address the particular vector they were attempting to measure. They then administered the items to heterogeneous groups of undergraduates typically made up primarily of freshmen and seniors. Then by examining the results, the resulting scales, item intercorrelations, and other data revised the instruments into a somewhat more psychometrically sound instrument and it was these instruments which were administered to the entering freshmen in 1977.

One of Chickering's vectors, that of Developing Purpose, was constructed by Will Barratt. Within the vector of Developing Purpose, Chickering posits three aspects of this vector which represent three distinct areas of behavior in which students change. These three aspects are Avocational and Recreational Interests, Vocational Interests and Style of Life. Barratt began with an instrument containing 78 items related to these three aspects of development and eventually refined his instrument into the Developing Purposes Inventory and examples of the items in this inventory can be seen on the third page of the hand-out. The final version contains three separate sub-scales each composed of 15 items each. Two examples of the types of items which appear on each of the sub-scales can also be seen on that page of the hand-out. Students were originally administered the instruments on a random basis during a two-day Freshman Orientation period in the Summer of 1977. Most entering freshmen attend the summer orientation program prior to the fall semester. Those students

who still remain on campus four years later were approached to participate in retaking the particular instrument which they had originally taken in 1977. A variety of techniques to obtain their cooperation ranging from asking them to come to certain classrooms to take the test with refreshments--coffee and cookies--to setting up testing stations in alcoves of corridors in high traffice buildings on the campus as well the Student Union and University Library to tracking down those students who live in apartments in the 50 blocks adjoining the campus, leaving off the instruments early in the evening and then returning to collect them later the same evening. This variety of approaches resulted in a 70 to 80% response on the various Chickering instruments.

The results on the Developing Purposes Inventory are shown here and on the next page of the hand-out. Here are the three sub-scales on the inventory, Avocationa/Recreational Interests, Vocational Interests, and Style of Life. Here for example are the means for 1977 and 1981 for the Avocational/Recreational Interests. The means are very similar with no significant difference between them. The 1981 mean is only slightly higher. The same is true for Vocational Interests--55.81 for 1977 and the 1981 mean only slightly higher--56.05. The Style of Life sub-scale did show a significant increase--52½ to 55. The increase although not great is statistically significant. It is apparent that at least as measured by the items on this inventory, these students did not show much growth on the vector of developing purpose.

When those students who were still around in 1981 were compared to those who were not--those who had dropped out--on the scores in the Developing Purposes Inventory that they had obtained as entering freshmen no significant differences were found between the drop-outs and the persisters. On this next table we find the means for both groups to be almost exactly equal on each of the three sub-scales. The mean scores are not only not significantly different, they are almost identical for both groups.

It was Bob Mines here who while a Ph.D. student at Iowa, attempted to measure Chickering's vector of Freeing of Interpersonal Relationships. This vector consists of two aspects (1) increased tolerance and respect for people of different backgrounds, values and life experiences, and (2) a shift in the quality of relationships with intimate and close friends. Mines thus built an instrument with two sub-scales as seen on the next page of the hand-out-- a 20 item scale measuring tolerance and a 22 item scale measuring quality of relationships. Together consistituting the Mines-Jensen Interpersonal Relationships Inventory. The results of the study in which the same students who took the instrument in 1977 are compared with the scores they received in 1981 are shown here on the overhead and also on the next table in your handout. We see that as measured by this instrument students showed significant growth on this instrument. The difference on the tolerance scale between 55.71 in 1977 and 59.23 in 1981 is the growth of over 2/3's of a standard

deviation and is obviously highly statistically significant. The same is true for the quality of relationships sub-scale. The growth as shown by the difference between the means 1977 and 1981 is over 4 points and again more than 2/3's of a standard deviation.

Mines retested samples of the group testing during orientation at two different times during the freshmen year. He also found significant increases on each of these scales took place during the freshman year. Generalizing from his data to ours, we might estimate that approximately half of the growth on these scales takes place during the freshman year and the other half during the remaining three years.

An attempt to measure the development of identity was carried out by Dary Erwin through his development of the Ego Identity Scale. Chickering purposed that the quest for identity is a strong life time developmental task that reaches its peak during late adolescence and early adulthood. He felt that establishing one's identity is necessary before a person can commit him or herself to roles such occupational role. The Erwin Identity Scale consists of three sub-scales as shown on the next page of the hand-out--a sub-scale measuring confidence, one measuring sexual identity, and one measuring conceptions about body and appearance.

Mean scores on the Erwin Identity Scale for the students assessed in 1977 and 1981 are showed on the last table in the handout. Scores changed significantly on each of these sub-scales and in each case the scores went down and the drop was a large one, almost a full standard deviation on each sub-scale. The significant level was left off of this table but in each case it was beyond the

.01 level. In his follow-up of the students tested during orientation in their first year of college Erwin also found that their scores also went down. It was expected that perhaps there was a loss of identity during the first year of college but that this would develop so that by the time the senior year rolled around scores would be higher than they had been for the entering freshman. Instead, scores which dropped over the period of the freshman year continued to drop throughout the college years. To the extent that this instrument measures a sense of identity, it would appear that seniors have fewer feelings of identity than they did as freshman.

Discussion

Briefly then what tentative conclusions can we reach from these sets of data. Of course Chickering never believed that students moved ahead on each of his vectors all at the same time at a standard pace. Instead, he saw students moving up on one then perhaps another staying still on some, etc. Our data, however, suggests that while the majority of students may move on certain of his vectors, the college years contribute little to others and that much of his development probably takes place after college.

If we think about the various Chickering vectors and if we think about the students we deal with in our counseling and our advising relationships along with the data we have collected here the situation may become a bit clearer. Think about the undergraduates you know well. Obviously developing relationships is

very important to many of them. They learn to deal with roommates, other students on their floor and in their classes who are different in many ways and they develop considerable tolerance for others and many relationships both with the same and opposite sexes become very strong and last throughout their lives. It makes sense that students would develop considerably on this vector. We did not measure the vector of developing autonomy but we might expect that that too would show a large shift from freshmen to senior year. Students spend considerable efforts becoming autonomous, becoming independent from their parents, so this vector should show considerable growth.

On the other hand, students feel they are very pressured for time, they do not feel they have the time to develop many of the hobbies, and avocational pursuits that will become important to them after their college years. While they may participate in intermurals, fraternity and sorority organizations, and other extracurricular activities, many of these are quite dissimilar to the types of activities they will puruse later. While they may be thinking of the specific occupations and life styles they will be following in their later years, these decisions along these lines are not faced directly during the college years and so it is expected that this growth on this vector along with several others such as developing identity and probably achieving a sense of competency will show far greater growth during the years in which they are establishing themselves in their careers and families.

Many students do not feel a great sense of competency while on the college campus, it appears that in every class, in every athletic endeavor there are numerous other students who are able to excel far beyond what they are able to achieve. It is only after they get on the job or often on summer or part-time jobs that they find that they can succeed, often far easier than they expected, that they developed this sense of competency. Sanford, found among his Vassar students, that feelings of identity, feelings of competency, increased greatly during the first few years after college graduation not during college.

We will be exploring the changes which took place on specific items on these inventories and the impact of various environmental factors and college experiences on these vectors as we continue to analyze these results. Our preliminary results seem to indicate that Chickering's vectors will need substantial revision before it will be possible to use them as a blue print for enhancing student development. On certain vectors it may be possible for the institution to contribute substantially to this growth while little growth can be expected to take place on others.

It should be emphasized that these three instruments assessing development on these three different vectors are not highly developed, widely researched measures with high reliabilities and with many supporting validity studies. Instead, they represent only the very first attempts to develop empirical instruments that can be objectively scored. The reliabilities of certain of the sub-scales

of these instruments dropped down as low as the .6 range while other sub-scales have substantially higher reliabilities above .8 even pushing .9. In general, validity, outside of content validity, has not been adequately assessed. But they are all we have. They were administered originally in 1977 and obviously they could not be substantially changed if useful longitudinal data was to be gathered in 1981.

Mean Scores on the Developing Purposes Inventory 1977-1981

	Avocational-Recreational Interests		Vocational Interests		Style of Life	
	1977	1981	1977	1981	1977	1981
Mean	50.95	51.71	55.81	56.05	52.48	55.08
Standard Deviation	4.78	4.20	6.44	5.74	7.74	6.65
T	1.034		.241		2.206	
Significance	.302		.810		.029*	

N = 75

Mean Scores on the Mines-Jensen Interpersonal Relationship Inventory 1977-1981

	Tolerance Level		Quality of Relationships	
	1977	1981	1977	1981
Mean	55.71	59.23	65.10	69.56
S.D.	5.72	5.52	5.80	6.06
T	6.26		5.86	
Significance	.0001		.0001	

N = 77

Mean Scores on the Erwin Identity Scale 1977-1981

	Confidence		Sexual Identity		Conceptions About Body & Appearance	
	1977	1981	1977	1981	1977	1981
Mean	77.44	63.14	92.95	84.22	84.27	62.61
Standard Deviation	10.40	10.98	11.67	10.19	10.35	9.88
t	-8.70		-6.19		-20.34	

Significance

N = 83